

SEQUENCE LISTING

<110> MCFADDEN, GRANT
ESSANI, KARIM

<120> NUCLEIC ACID MOLECULES AND POLYPEPTIDES
FOR IMMUNE MODULATION

<130> 50082/015002

<150> US 60/239,354

<151> 2000-10-11

<160> 9

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 26

<212> PRT

<213> Tanapox virus

<400> 1

Ile	Thr	Leu	Lys	Tyr	Cys	Tyr	Thr	Val	Thr	Leu	Lys	Asp	Asn	Gly	Leu
1				5					10					15	
Tyr	Asp	Lys	Val	Phe	Tyr	Cys	His	Tyr	Asn						
			20					25							

<210> 2

<211> 338

<212> PRT

<213> Yaba Monkey tumor virus

<400> 2

Met	Asn	Lys	Leu	Ile	Leu	Phe	Ser	Thr	Ile	Val	Ala	Val	Cys	Asn	Cys
1				5					10					15	
Ile	Thr	Leu	Lys	Tyr	Asn	Tyr	Thr	Val	Thr	Leu	Lys	Asp	Asn	Gly	Leu
			20					25					30		
Tyr	Asp	Gly	Val	Phe	Tyr	Asp	His	Tyr	Asn	Asp	Gln	Leu	Val	Thr	Lys
		35					40				45				
Ile	Ser	Tyr	Asn	His	Glu	Thr	Arg	His	Gly	Asn	Val	Asn	Phe	Arg	Ala
	50				55						60				
Asp	Trp	Phe	Lys	Ile	Ser	Arg	Ser	Pro	His	Thr	Pro	Gly	Asn	Asp	Tyr
65				70					75					80	
Asn	Phe	Asn	Phe	Trp	Tyr	Ser	Leu	Met	Lys	Glu	Thr	Leu	Glu	Glu	Ile
			85						90				95		
Asn	Lys	Asn	Asp	Ser	Thr	Lys	Thr	Thr	Ser	Leu	Ser	Leu	Ile	Thr	Gly
			100					105					110		
Cys	Tyr	Glu	Thr	Gly	Leu	Leu	Phe	Gly	Ser	Tyr	Gly	Tyr	Val	Glu	Thr
		115					120					125			
Ala	Asn	Gly	Pro	Leu	Ala	Arg	Tyr	His	Thr	Gly	Asp	Lys	Arg	Phe	Thr
	130					135					140				
Lys	Met	Thr	His	Lys	Gly	Phe	Pro	Lys	Val	Gly	Met	Leu	Thr	Val	Lys
145				150						155				160	
Asn	Thr	Leu	Trp	Lys	Asp	Val	Lys	Thr	Tyr	Leu	Gly	Gly	Phe	Glu	Tyr


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tgtaaaaaaac actcttttga aagatgtaaa aacttatcta ggcgggttttg aatacatggg 540
atgttcatta gctattttag attaccaaaa aatggctaaa ggtgaaatac caaaagatac 600
aacacctaca gtgaaagtaa cgggtaatga gttagaagat ggtaacatga ctcttgaatg 660
cagtgtaaat tcattttacc ctcttgacgt aattactaag tggatagaaa gcgaacattt 720
taaagggtgaa tataaatatg ttaacggaag atactatcca gaatggggga gaaaatccga 780
ttatgagcca ggagagccag gttttccatg gaatattaaa aaagataaag atgcaaacac 840
atatagttta acagattttag tacgtacaac atcaaaaatg agtagtcaac tagtatgtgt 900
tgttttccat gacacttttag aagcgcaagt ttatacttgt tctgaaggat gcaatggaga 960
gctatacgac cacctatata gaaaaacaga agaaggagaa ggtgaagagg atgaagaaga 1020
cggaaccct cgag 1034

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<210> 6

<211> 338

<212> PRT

<213> Yaba-like disease virus

<400> 6

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Met Asp Lys Leu Leu Leu Phe Ser Thr Ile Val Ala Val Cys Asn Cys
1          5          10          15
Ile Thr Leu Lys Tyr Asn Tyr Thr Val Thr Leu Lys Asp Asp Gly Leu
20          25          30
Tyr Asp Gly Val Phe Tyr Asp His Tyr Asn Asp Gln Leu Val Thr Lys
35          40          45
Ile Ser Tyr Asn His Glu Thr Arg His Gly Asn Val Asn Phe Arg Ala
50          55          60
Asp Trp Phe Asn Ile Ser Arg Ser Pro His Thr Pro Gly Asn Asp Tyr
65          70          75          80
Asn Phe Asn Phe Trp Tyr Ser Leu Met Lys Glu Thr Leu Glu Glu Ile
85          90          95
Asn Lys Asn Asp Ser Thr Lys Thr Thr Ser Leu Ser Leu Ile Thr Gly
100          105          110
Cys Tyr Glu Thr Gly Leu Leu Phe Gly Ser Tyr Gly Tyr Val Glu Thr
115          120          125
Ala Asn Gly Pro Leu Ala Arg Tyr His Thr Gly Asp Lys Arg Phe Thr
130          135          140
Lys Met Thr His Lys Gly Phe Pro Lys Val Gly Met Leu Thr Val Lys
145          150          155          160
Asn Thr Leu Trp Lys Asp Val Lys Ala Tyr Leu Gly Gly Phe Glu Tyr
165          170          175
Met Gly Cys Ser Leu Ala Ile Leu Asp Tyr Gln Lys Met Ala Lys Gly
180          185          190
Lys Ile Pro Lys Asp Thr Thr Pro Thr Val Lys Val Thr Gly Asn Glu
195          200          205
Leu Glu Asp Gly Asn Met Thr Leu Glu Cys Thr Val Asn Ser Phe Tyr
210          215          220
Pro Pro Asp Val Ile Thr Lys Trp Ile Glu Ser Glu His Phe Lys Gly
225          230          235          240
Glu Tyr Lys Tyr Val Asn Gly Arg Tyr Tyr Pro Glu Trp Gly Arg Lys
245          250          255
Ser Asn Tyr Glu Pro Gly Glu Pro Gly Phe Pro Trp Asn Ile Lys Lys
260          265          270
Asp Lys Asp Ala Asn Thr Tyr Ser Leu Thr Asp Leu Val Arg Thr Thr
275          280          285
Ser Lys Met Ser Ser Gln Pro Val Cys Val Val Phe His Asp Thr Leu
290          295          300
Glu Ala Gln Val Tyr Thr Cys Ser Glu Gly Cys Asn Gly Glu Leu Tyr
305          310          315          320
Asp His Leu Tyr Arg Lys Thr Glu Glu Gly Glu Gly Glu Glu Asp Glu
325          330          335

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Glu Asp

<210> 7
<211> 1017
<212> DNA
<213> Yaba-like disease virus

<400> 7
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tataattata ctgttacgtt aaaagatgat gggttatagc atggagtatt ttacgatcat 120
tacaacgatc agttagtgac gaaaatatca tataaccatg aaactagaca cggaaacgta 180
aatttttaggg ctgattgggt taatatctct agggagtccc acacgccagg taacgattat 240
aactttaact tttgggtatt tttaatgaaa gaaacttttag aagaaattaa taaaaacgat 300
agcacaaaaa ctacttcgct ttcattaatc actgggtggt atgaaacagg attattatct 360
ggtagttatg ggtatgtaga aacggccaac gggccgttgg ccagatacca tacaggagat 420
aaaaggttta cgaataatgac acataaagggt tttcccaagg ttggaatggt aactgtaaaa 480
aacactcttt ggaaagatgt aaaagcttat ttaggcgggt ttgaatatat gggatgttca 540
ttagctatct tagattacca aaaaatgggt aaaggtaaaa taccaaaaga tacaacacct 600
acagtgaag taacgggtaa tgagttagaa gatggtaaca tgactcttga atgcactgta 660
aattcatttt accctcctga cgtaattact aagtggatag aaagcgaaca ttttaaagggt 720
gaatataaat atgttaacgg aagatactat ccagaatggg ggagaaaatc caattatgag 780
ccaggagagc caggttttcc atggaatatc aaaaagata aagatgcaaa tacatatagt 840
ttaacagatt tagtacgtac aacatcaaaa atgagtagtc aaccagtatg tgttggtttc 900
catgacactt tagaagcgca agttttatact tgttctgaag gatgcaatgg agagctatac 960
gatcacctat atagaaaaac agaagaagggt gaagggtgaag aggatgaaga agactga 1017

<210> 8
<211> 340
<212> PRT
<213> Swinepox virus (C1L)

<400> 8
Met Ile Thr Lys Ala Ile Val Ile Leu Ser Ile Ile Thr Ala Tyr Val
1 5 10 15
Asp Ala Ser Ala Phe Leu Val Tyr Asn Tyr Thr Tyr Thr Leu Gln Asp
20 25 30
Asp Asn His Arg Tyr Asp Phe Glu Val Thr Asp Tyr Phe Asn Asp Ile
35 40 45
Leu Ile Lys Arg Leu Lys Leu Asn Ser Glu Thr Gly Arg Pro Glu Leu
50 55 60
Arg Asn Glu Pro Pro Thr Trp Phe Asn Glu Thr Lys Ile Arg Tyr Tyr
65 70 75 80
Pro Lys Asn Asn Tyr Asn Phe Met Phe Trp Leu Asn Arg Met Ser Glu
85 90 95
Thr Leu Asp Glu Ile Asn Lys Leu Pro Glu Thr Ser Asn Pro Tyr Lys
100 105 110
Thr Met Ser Leu Thr Ile Gly Cys Thr Asp Leu Arg Gln Leu Gln Val
115 120 125
Asn Phe Gly Tyr Val Thr Val Gly Gly Asn Ile Trp Thr Arg Phe Asp
130 135 140
Pro Lys Asn Lys Arg Phe Ser Lys Val Arg Ser Arg Thr Phe Pro Lys
145 150 155 160
Val Gly Met Leu Thr Val Lys Ser Gln His Trp Glu Arg Val Met Glu
165 170 175
His Leu Gly Ser Met Val Thr Leu Thr Cys Pro Phe Thr Ala Asp Asp
180 185 190
Tyr Tyr Lys Ile Ser Lys Gly Tyr Ile Asp Lys Pro Val Lys Pro Thr

	195		200		205										
Val	Thr	Val	Thr	Gly	Ile	Glu	Arg	Gly	Asp	Asn	Thr	Thr	Leu	Ile	Cys
	210					215					220				
Thr	Phe	Asp	Asn	His	Tyr	Pro	Ser	Ser	Val	Ala	Val	Lys	Trp	Tyr	Asn
225					230					235					240
Ile	Glu	Asp	Phe	Ala	Pro	Asp	Tyr	Arg	Tyr	Asp	Pro	Tyr	Val	Asn	Glu
				245						250					255
Leu	Leu	Pro	Asp	Thr	Asp	Tyr	Leu	Pro	Gly	Glu	Pro	Gly	Tyr	Pro	Thr
				260						265					270
Ile	Thr	Arg	Arg	Leu	Gly	Asp	Lys	Tyr	Leu	Phe	Thr	Ser	Ser	Pro	Arg
		275					280					285			
Val	Met	Val	Pro	Thr	Ile	Met	Ser	Asn	Arg	Ile	Ala	Cys	Val	Gly	Phe
	290					295					300				
His	Ser	Thr	Leu	Glu	Pro	Ser	Ile	Tyr	Arg	Cys	Val	Asn	Cys	Ser	Gly
305					310					315					320
Pro	Glu	Pro	Val	Leu	Gln	Tyr	Gln	Gly	Asp	Arg	Arg	Asn	Asp	Leu	Glu
				325					330						335
Asp	Glu	Glu	Asp												
			340												

<210> 9
 <211> 1023
 <212> DNA
 <213> Swinepox virus (C1L)

<400> 9
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 ttcttagtat acaattatac atatacttta caagatgata atcatcgata tgacttcgaa 120
 gtcaccgatt attttaatga tataactaata aaacgtttta aactaaatag cgagacagga 180
 agaccagaat taagaaatga accaccaaca tgggtttaatg agactaagat tagatattat 240
 ccgaaaaata attataattt tatgttctgg ctaaatagaa tgagtgaac gctagatgag 300
 ataaataaac ttccagaaac gagtaatcct tacaagacta tgctcctgac aattggatgt 360
 actgatctaa gacaacttca agtaaatttc ggttatgtta ctgtaggtgg taatatatgg 420
 acacgattcg accccaagaa taaacgcttt agtaaagtta gatcacgtac atttccaaag 480
 gtaggaatgt taactgttaa atcacaacac tgggaacgtg ttatggaaca tcttgatca 540
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 cctgagcctg ttttacaata ccaggagat agaaggaatg acttgaggga tgaggaggat 1020
 taa 1023